Bang & Olufsen Beocord 1200

Test Report *(Sound and Picture Recording, November 1971)*

The Beocord 1200 is one of the matching units of a complete Bang and Olufsen hi-fi system, of which the Beornaster tuner/amplifier and Beovox 1200 loudspeakers were the subject of a review published in the October issue of *Sound & Picture Tape Recording.* The 1200 tape unit operates at two speeds, 19 and 9.5 cm/s, and is for stereo or mono (quarter-track) recording and replay. It has provision for mixing and track-to-track recording but does, of course, require an external amplifier and speakers, such as the B&O units already mentioned. Direct replay is, however, available from the unit through stereo headphones.

The Beocord 1200 is quite compact and is housed in a wood surround type case. It can be used vertically or horizontally and spool retainers are provided to keep the tape spools in place during operation in the vertical position. Other accessories include a plexiglass deck cover, a 7-inch spool of tape and spare spool, and a screened lead terminated with 5-pin DIN plugs. Other accessories, such as a matching BM5 stereo microphone, are available as extras.

The main controls are located on the deck panel and the microphone and headphone sockets are mounted on the side of the unit to the left and right respectively. Other input sockets for radio and auxiliary signal levels and the line output sockets are set in a recessed panel beneath the recorder.

A special feature of this recorder is the use of combined quarter-track hyperbolic record/replay heads which, it is claimed, ensure better contact between the head faces and the tape. Another special feature is a photo-cell-controlled automatic tape stop system that operates in the event of a broken tape or at the end of a tape run.

The tape transport controls consist of a three-way lever for record, replay and re-wind, which operates in conjunction with a small separate tape-hold lever. This latter control is effective in both recording and replay channels, tape speed, sound-on-sound and automatic recording level control is by means of twelve push buttons. Two of these are used for stereo and/or mono recording and when operated automatically switch on pilot lamps to indicate which channel (or pair of channels) is being used.

In place of the usual rotary-type volume controls, calibrated slider-type controls are used for adjusting the recording level for microphone or line input signals, for replay level from the headphone socket, and for the sound-on-sound system. The mixing arrangement allows complete integration of signals from microphone and the radio or auxiliary inputs.

The output signal level is fixed, i.e. there are no replay volume controls. Although the radio and auxiliary input can be taken via phono or DIN sockets, the external amplifier output is available only from phono sockets.

The Beocord 1200 has twin VU type recording level meters but there is an over ride button that allows the

automatic recording level system to be used in place of manual control.

The recorder is well constructed and the wood surround case can be removed if it is required to mount the unit in a hi-fi cabinet. The main chassis carries all the circuitry and the tape drive mechanism, so that when the wood surround is removed the 1200 is still a one piece unit. No information was provided with regard to the circuitry employed and all that can be said is that it is, of course, transistorised. The tape transport mechanism is the usual system of pulleys and idler wheels driven by an external rotor-type Papst synchronous motor.

PERFORMANCE TEST RESULTS

No fault could be found with operation generally and prolonged periods of running revealed no deviation from the performance as tested or any probable cause for failure. There were no operational difficulties, except that the replay buttons must be left in the neutral position while recording. If they are set to the replay position while recording the result is a recording well below the proper level.

The automatic recording level responded well and the sound-on-sound system was found to have limited but nevertheless useful applications. With this it is possible to record on one track via the microphone or radio and auxiliary inputs and then to transfer that recording to another track with signals from the microphone input, but not from the radio or auxiliary inputs. Signals already recorded for sound-on-sound and those being recorded can be monitored together through the headphone socket. The recorder tape drive motor can be switched off and the internal pre-amplifiers used for 'play through' in conjunction with an external amplifier and loudspeaker.

The sensitivity ratings for the various inputs were each as specified, but all have a high overload margin. As the output signal level is not controllable and because a fully recorded tape may deliver in excess of 1V rms of signal the problem of overloading an external amplifier might arise, particularly if the input requirements of this are below say 500mV, in which case it might be necessary to attenuate the signals from the recorder. This should not apply if the Beocord 1200 is used with the matching Beomaster 1200 amplifier.

It should be noted that the performance of the Beocord 1200 is based on the German DIN 45,500 standards, which are not necessarily adopted in this country but which are taken into account when accepted British methods of performance testing are applied. It can be said, however, that the performance of the Beocord 1200 rates as hi-fi.

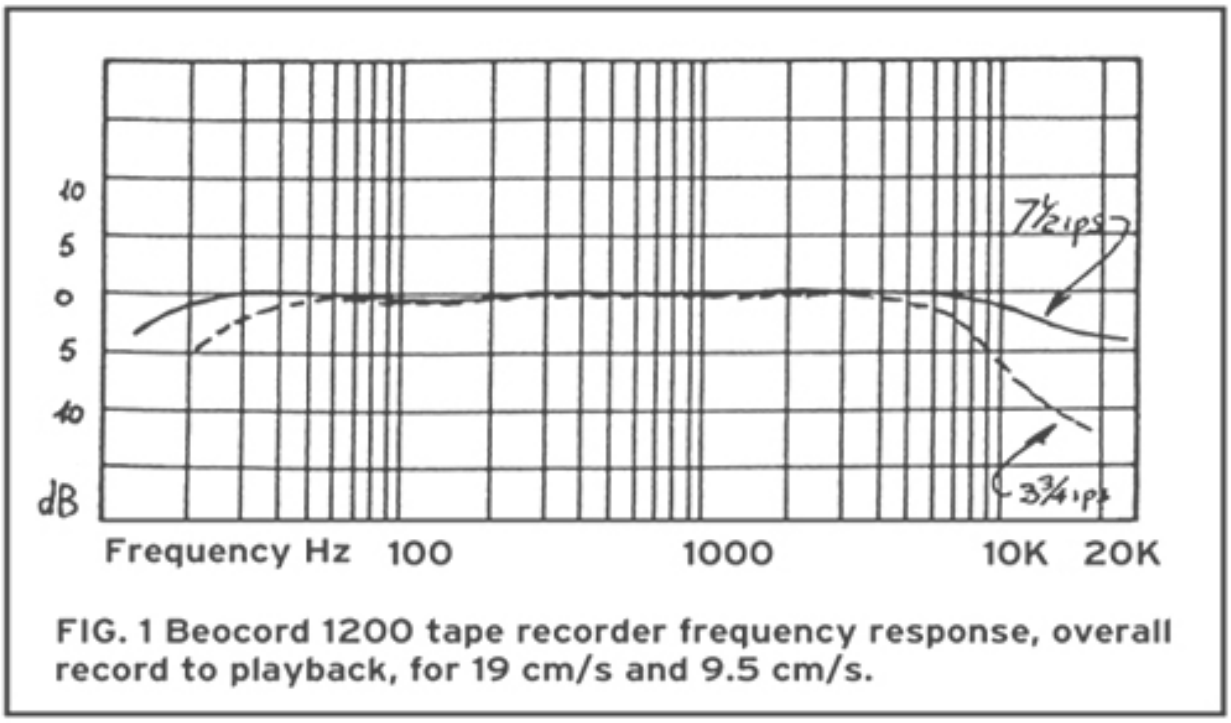

FIG. 1 Beocord 1200 tape recorder frequency response, overall record to playback, for 19 cm/s and 9.5 cm/s.

The overall record-to-playback frequency responses for the two tape speeds, 19 and 9.5 cm/s, are given in **Fig 1** and both agree favourably with the claims made.

The hum and noise level, related to the signal output from a OdB level recording at 100Hz yielded a figure of better than -50dB for each tape speed, which is a good average for quarter-track tape recorders and can be considered more than adequate for hi-fi.

Crosstalk for mono recording and playback was below the hum and noise level and can be regarded as nil (the makers claim -65dB) and for stereo was better than the -45dB specified. Total harmonic distortion for overall record to playback and with reference to a 1000Hz sine-wave recorded to 0dB level was 3.5% which is, of course, better than the makers' claim of not greater than 5%.

The mechanical performance could not be faulted in any way although re-wind is a little slow, as is usual with single motor tape transport systems. After four hours continuous running the Papst motor was only just warm and wow and flutter checked at this point was less than the 0.15% specified for 19 cm/s tape speed and within spec at 0.2% at 9.5 cm/s. Nominal tape speed was to within less than 1% for each of the two speeds.

There is no doubt that the Beocord 1200 is a fine record/playback unit with an excellent performance and facilities likely to prove attractive to the creative recordist as well as to those who want a reliable machine solely for its use with other hi-fi equipment. Despite a recently-made reduction, however, the price is still rather high at £104.26; but, as is usual these days, the price of anything worthwhile generally goes up and not down.

by F. C. Judd